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EXAMINER	
QI, ZHI QIANG	
ART UNIT	**PAPER NUMBER**
2871	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/270,780	HIYAMA ET AL.	
	Examiner	Art Unit	
	Mike Qi	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2003*.

2a)☐ This action is ~~FINAL~~. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-22,25,26,29,30,33 and 34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-22,25,26,29,30,33 and 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The examiner reconsidered the references and did further search after interview. According to the further search and reconsideration, new references were discovered and the objected claims in the previous final rejection are now rejected. Figs. 32-35 in the specification described that are conventional liquid crystal display structure, and these conventional figures constitute as prior art.

According to the Applicant's arguments filed on Nov.24, 2003 and the Examiner's further search and reconsideration, the previous final rejection has been withdrawal and a further non-final rejection is presented.

Claim Objections

1. Claim 11 is objected to because of the following informalities: Claim 11 in which ". . . a pair of absorption type polarizers arranged **sot** that the pair of transparent substrates are held between the pair of absorption type polarizers; . . " should be - - a pair of absorption type polarizers arranged **so** that the pair of transparent substrates are held between the pair of absorption type polarizers; . . - - Appropriate correction is required.

Claim Rejections - 35 U.S.C. § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1, 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant admitted prior art (AAPA) in view of US 6,025,897 (Weber et al).**

Claims 1, 13, and 20, the AAPA discloses (the "background of the invention" paragraph in the specification; conventional liquid crystal display device of Fig. 35) a structure of a liquid crystal display device comprising:

(concerning claims 1, 13 and 20)

- an illumination device (51,53,54 and 56);
- a light control element (40) arranged at a projected light side of the illumination device;
- a reflective polarizer (30) arranged at an upper portion of the light control element (40);
- the light control element (40) is the only light control element arranged between the illumination device (51,53,54 and 56) and the reflective polarizer (30) (see the conventional liquid crystal display device of Fig.35);

(concerning claims 13 and 20)

- a liquid crystal display element (20) for controlling polarization of projected light projected from the reflective polarizer (30), so that the major axis direction of a pixel must be arranged approximately parallel to a direction wherein the linearly polarized light component of

the projected light projected from the illumination device (51,53,54 and 56) is high, in order to obtain maximum light transmittance;

- a screen (10AA) arranged at an upper portion of the liquid crystal display element (see Fig.32), and the viewing angle is widened by the screen (10AA) (see page 5, lines 5-6).

AAPA does not expressly disclose that the polarized light transmission axis of the reflective polarizer is adjusted so as to be substantially perpendicular or substantially parallel to a control axis of the light control element.

However, Weber discloses (col.9, lines 43 - 67; Fig.11) that the optically structure layer (113) and structure surface (112) (also can be a light control element, because the function is to control light), and with the reflective polarizer (116) to make up a brightness enhanced reflective polarizer (110), and the light transmitted by optically structure layer (113) passes through the reflective polarizer (116) at near normal angles (perpendicular to reflective polarizer), so that is a polarized light transmission axis of the reflective polarizer to be adjusted substantially perpendicular to a control axis of the light control element, so as to enhance the brightness and to achieve an adequate contrast for the display.

Furthermore, AAPA discloses an another conventional liquid crystal display device (as shown in Fig.36) that the polarized light transmission axis (31) of the reflective polarizer (30) is adjusted to be substantially perpendicular to the control axis (41) of the light control element (40) so as to obtain a maximum transmittance.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to arrange such reflective polarizer in which the polarized light transmission axis of the reflective polarizer is adjusted so as to be substantially perpendicular or in parallel to the control axis of the light control element as claimed in claims 1, 13 and 20 for achieving maximum light transmittance and widen the viewing angle.

4. **Claims 1-3, 5-7, 10, 12-14, 17-18, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant admitted prior art (AAPA) in view of US 5,587,816 (Gunjima et al).**

Claims 1, 13, and 20, the AAPA discloses (the "background of the invention" paragraph in the specification; conventional liquid crystal display device of Fig. 35) a structure of a liquid crystal display device comprising:

(concerning claims 1, 13 and 20)

- an illumination device (51,53,54 and 56);
- a light control element (40) arranged at a projected light side of the illumination device;
- a reflective polarizer (30) arranged at an upper portion of the light control element (40);
- the light control element (40) is the only light control element arranged between the illumination device (51,53,54 and 56) and the reflective polarizer (30)(see the conventional liquid crystal display device of Fig.35);

(concerning claims 13 and 20)

- a liquid crystal display element (20) for controlling polarization of projected light projected from the reflective polarizer (30), so that the major axis direction of a pixel must be arranged approximately parallel to a direction wherein the linearly polarized light component of the projected light projected from the illumination device (51,53,54 and 56) is high, in order to obtain maximum light transmittance;
- a screen (10AA) arranged at an upper portion of the liquid crystal display element (see Fig.32), and the viewing angle is widened by the screen (10AA) (see page 5, lines 5-6).

AAPA does not expressly disclose that the polarized light transmission axis of the reflective polarizer is adjusted so as to be substantially perpendicular or substantially parallel to a control axis of the light control element.

However, Gunjima discloses (col.5, lines 30-41) that the polarizing sheet provided on the light-incident side of the liquid crystal display element, such that the transmittance thereof is maximized with respect to the **p** polarized light component which is emitted from the polarized light separator.

Gunjima also discloses (col.3, lines 11-15 and col.2, lines 27-31) that the **s** polarized light component is reflected and is reused.

Therefore, the transmission axis of polarized light is adjusted and the transmission rate of the projected light from the illumination device is increased.

Gunjima also indicates (col.5, lines 36-41) that an average direction of an optical axis of polarization of a light ray emitted from the flat light guide in the flat illumination device

approximately agrees with the optical axis of polarization of the polarizing sheet on the light-incident side of the liquid crystal display element, i.e., the polarized light transmission axis of the reflective polarizer is approximately in parallel to a major axis direction of pixel of the liquid crystal display element (because the **p** polarized light is transmitted), and the polarized light transmission axis of the reflective polarizer must be adjusted substantially perpendicular or in parallel to the control axis of the light control element so as to obtain a maximized transmittance so as to obtain a maximized transmittance.

Furthermore, AAPA discloses an another conventional liquid crystal display device (as shown in Fig.36) that the polarized light transmission axis (31) of the reflective polarizer (30) is adjusted to be substantially perpendicular to the control axis (41) of the light control element (40) so as to obtain a maximum transmittance.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to arrange such reflective polarizer in which the polarized light transmission axis of the reflective polarizer is adjusted so as to be substantially perpendicular or in parallel to the control axis of the light control element as claimed in claims 1, 13 and 20 for achieving maximum light transmittance and widen the viewing angle.

Claims 2-3, Gunjima discloses (col.5, lines 30-41) that the polarizing sheet provided on the light-incident side of the liquid crystal display element, such that the transmittance thereof is maximized with respect to the **p** polarized light component which is emitted from the polarized light separator.

Gunjima also discloses (col.3, lines 11-15 and col.2, lines 27-31) that the **s** polarized light component is reflected and is reused.

Gunjima also indicates (col.5, lines 36-41) that an average direction of an optical axis of polarization of a light ray emitted from the flat light guide in the flat illumination device approximately agrees with the optical axis of polarization of the polarizing sheet on the light-incident side of the liquid crystal display element, i.e., the polarized light transmission axis of the reflective polarizer is approximately in parallel with a major axis direction of pixel of the liquid crystal display element (because the **p** polarized light is transmitted), so as to obtain a maximized transmittance.

Concerning claim 3, the optical axis of the **s** polarized light component must be perpendicular to the optical axis of the **p** polarized light component, and the minor axis direction of the pixel is perpendicular to the major axis direction of the pixel, so that the reflective polarizer must have a directivity of the light in a minor axis direction of the pixel.

AAPA indicates (page 5, lines 5-6) that the viewing angle is widened by the screen (10AA).

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to arrange such polarizer and screen as claimed in claims 2-3 for achieving maximized transmittance and widen the viewing angle.

Claim 5, AAPA discloses (page 4, lines 23-25 and conventional liquid crystal display device of Fig.32) that a screen (10AA) has transparent portions in the shape of quadrangular

pyramid at the displaying plane side and black absorbing bodies covering the intervals therebetween, i.e., a screen composed to absorb external light (because the black absorbing bodies absorb light) and to transmit projected light from the illumination device (because the transparent portions).

Claims 6 and 14, AAPA discloses (page 6, lines 10-20 and conventional liquid crystal display device of Fig.35) that in the light control element (40), generally, PET (polyethylene terephthalate) film having a birefringence material is used. So that the PET film is a birefringent medium, and that is arranged between the illumination device (51,53,54 and 56) and the light control element (40).

Claims 7, 18 and 22, AAPA discloses (page 4, lines 18-22; conventional liquid crystal display device of Fig.32) that the liquid crystal layer (13) is interposed between two transparent substrates (11A, 11B) and two polarizers are arranged on either side thereof.

Although AAPA does not expressly disclose using absorption polarizer, but Gunjima discloses (col.17, lines 36-67 and Fig.1) that a liquid crystal display element using a pair of absorbing type organic polarizing plates (9 and 10), so as to increase the contrast ratio.

Therefore, it would have bee obvious to those skilled in the art at the time the invention was made to use a pair of absorption type polarizers as claimed in claims 7, 18 and 22 for increasing the contrast ratio.

Claims 10 and 17, normally, the reflective color selective layer corresponding to the pixel of the liquid crystal element as shown in the AAPA of the conventional liquid crystal display device of Fig. 37 to display the color image.

Claim 12, AAPA discloses (conventional liquid crystal display device of Figs.37, 38) that a strip direction of the reflective color selective layer (506 or 512) coincides with an axis in a scattering direction of the screen so as to enhance the brightness of the color display, and that would have been at least obvious.

6. Claims 8, 15, 21 and 26, 30, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Gunjima as applied to claims 1-3, 5-7, 10, 12-14, 17-18, 20 and 22 above, and further in view of US 5,712,694 (Taira et al) and US 6,147,725 (Yuuki et al).

Claims 8, 15 and 21, Taira discloses (col.18, lines 39 - 63; Fig.21) that an illumination device comprising:

- light-guiding plate (1601) having front plane and rear plane, the front plane constituting light projecting plane, the rear plane having V-shape grooves (1606), i.e., a numerous depressed planes, protruded planes or steps and having respective slightly declined planes;
- light source (1605) arranged adjacent to the light guide (1601);
- reflector (1602) arranged at the rear plane of the light guide (1601);
- the projected light from the light source (1605) is propagated in the light guide (1601) and projected from the light projecting plane of the light guide (1601);

- the light is reflected by the reflection face of the V-shape grooves (1606), such that making the reflecting face as a mirror face would increase the light reflectance, and that was common and known in the art as the mirror face having high reflectance.

Yuuki also discloses (col.2, lines 19-54 and Fig.13) that a conventional illumination device comprises:

- a flat waveguide (light guide 206) having a front plane and a rear plane, the front plane constituting a light projecting plane, the rear plane with a plurality of sawtoothed diffused reflection parts (208a-208d) having declined planes (depressed or protruded);
- a light source (lamp 201) arranged adjacently to the waveguide (206);
- a reflector (reflecting sheet 207) arranged at the rear plane of the waveguide and contacting the rear plane of the waveguide (206) (or the illumination device).
- the projected light from the light source (201) is propagated in the waveguide (206) and projected from the light projecting plane of the waveguide (206).

Although Yuuki does not expressly disclose the declined plane of the reflector are manufactured to be mirrors, but using mirror plane for reflecting light was common and known in the art.

Yuuki also indicate (col.2, lines 50-54) that this reflection light is repeatedly carried out in the light guide plate (206), whereby the amount of light passing the polarizing separating film (205) is increased, thereby decreasing loss of the lamp light.

Yuuki indicates (col.1, line 52 - col.2, line 54) that the liquid crystal display device described in Figs.12-13 are a **conventional** liquid crystal display device.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to arrange such illumination device as claimed in claims 8, 15 and 21 for increasing the amount of light passing the polarizer and decreasing the light leakage.

Claims 26, 30 and 34, the stripes on the reflector are substantially parallel to the major axis direction of a pixel of the liquid crystal display element would be an obvious technique to enhance the brightness of the display, because the stripes of the reflector parallel to the major axis of the pixel electrodes would achieve a higher luminous reflectance, and that would have been at least obvious.

7. Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Gunjima as applied to claims 1-3, 5-7, 10, 12-14, 17-18, 20 and 22 above, and further in view of US 6,101,032 (Wortman et al).

Claims 9 and 16, Wortman discloses (col.9, lines 24-67; col.13, line 59-col.14, line 2) that for isotropic materials, the reflectivity varies as a function of angle of incidence, i.e., the light would be controlled by using the isotropic medium. This principle describes the behavior of uniaxially birefringent system that can be applied to create multilayer stacks having the desired optical effect for a wide variety of circumstances and applications.

Therefore, it would have been obvious to those skill in the art at time the invention was made to use isotropic medium or uniaxial birefringent medium as the light control element as claimed in claims 9 and 16 for achieving the desired optical effect in various applications.

8. **Claims 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant admitted prior art (AAPA) in view of US 5,587,816 (Gunjima et al).**

Claims 11 and 19, AAPA discloses (the "background of the invention" paragraph in the specification; conventional liquid crystal display device of Fig. 35) a structure of a liquid crystal display device comprising:

- an illumination device (51,53,54 and 56);
- a light control element (40) arranged at a projected light side of the illumination device;
- a reflective polarizer (30) arranged at an upper portion of the light control element (40);
- a liquid crystal display element (20) for controlling polarization of projected light projected from the reflective polarizer (30);
- a screen (10AA) arranged at an upper portion of the liquid crystal display element (see Fig.32).

AAPA does not expressly disclose that a liquid crystal layer interposed between a pair of transparent substrates and between a pair of absorption polarizer, and the projected light having an angle range for the brightness become ½ of a peak value satisfies a certain relationship.

However, Gunjima discloses (col.12, line 11 - col.13, line 44; Fig.1) that a liquid crystal display (11) disposed between the pair of absorbing polarized (9, 12), and the liquid crystal

display must have a pair of transparent substrates and that is a conventional liquid crystal display structure, because the light would be transmitted from the transparent substrates, and using the light polarization to increase the transmittance so as to increase the brightness. Gunjima also discloses (col.7, line 35 - col.12, line 10) that the polarization function of the multi-layer structure operates most effectively when the angle of incident is at Brewster's angle, and the function of sending the light which is incident on the edge portion of the light guide to the inside of the light guide (the illumination device) is determined in accordance with the material employed, and Gunjima discloses (col.10 lines 20-40) that a total reflection angle $\theta c = \sin^{-1}(1/n) = 42.2°$.

Although Gunjima does not disclose the same relationship as claimed, but the relationship as claimed is to define the projected light having an angle range for the brightness become ½ of a peak value and the angle rang is determined by the material employed, that is in order to improve the transmittance. Gunjima indicates (col.11, lines 9-18) that it is important to control the light emitted from the light guide, and it is preferable that the angle of light incident on the polarized light separator is provided with a maximum value at Brewster's angle of the polarized light separator, and the light quantity is substantially concentrated on Brewster's angle, so as to improve the illuminance.

Therefore, according to the principle of the Brewster's angle, it would have been obvious to those skilled in the art at the time the invention was made to find an angle range wherein a

brightness becomes ½ of a peak value satisfies a relation as claimed in claims 11 and 19, so as to improve the illuminance for the display.

9. **Claims 25, 29 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant admitted prior art (AAPA) in view of US 6,025,897 (Weber et al) and US 5,986,723 (Nakamura et al).**

Claims 25, 29 and 33, the AAPA (the "background of the invention" paragraph in the specification; conventional liquid crystal display device of Fig. 35) discloses a structure of a liquid crystal display device comprising:

(concerning claims 25, 29 and 33)

- an illumination device (51,53,54 and 56);
- a light control element (40) arranged at a projected light side of the illumination device;
- a reflective polarizer (30) arranged at an upper portion of the light control element (40);
- a screen (10AA) arranged at an upper portion of the liquid crystal display element (see Fig.32), and the viewing angle is widened by the screen (10AA) (see page 5, lines 5-6).

(concerning claims 29 and 33)

- a liquid crystal display element (20) for controlling polarization of projected light projected from the reflective polarizer (30), so that the major axis direction of a pixel must be arranged approximately parallel to a direction wherein the linearly polarized light component of the projected light projected from the illumination device (51,53,54 and 56) is high, in order to obtain maximum light transmittance;

- the light control element (40) is the only light control element arranged between the illumination device (51,53,54 and 56) and the reflective polarizer (30) (see the conventional liquid crystal display device of Fig.35);

AAPA does not expressly disclose that the polarized light transmission axis of the reflective polarizer is adjusted so as to be substantially perpendicular or substantially parallel to a control axis of the light control element, and the polarized light transmission axis of the reflective polarizer is approximately parallel to a major axis direction of a pixel of the liquid crystal display element, and a ratio of a length of the pixel on the major axis direction to a length of the pixel in the minor axis direction is substantially 3:1.

However, Weber discloses (col.9, lines 43 - 67; Fig.11) that the optically structure layer (113) and structure surface (112) (also can be a light control element, because the function is to control light), and with the reflective polarizer (116) to make up a brightness enhanced reflective polarizer (110), and the light transmitted by optically structure layer (113) passes through the reflective polarizer (116) at near normal angles (perpendicular to reflective polarizer), so that is a polarized light transmission axis of the reflective polarizer to be adjusted substantially perpendicular to a control axis of the light control element, so as to enhance the brightness and to achieve an adequate contrast for the display. Weber also discloses (col.8, line 64 - col.9, line 27; Fig.9) that the light must have a correct polarization to match the transmission axis of the polarizer (the rear polarizer of the LCD) so as to make more efficient use of the light made available by optical cavity (140) (illumination device). Therefore, the polarized light

transmission axis of the reflective polarizer is parallel to a major axis direction of a pixel of the liquid crystal display element would match the transmission axis of the rear polarizer of the LCD so as to achieve more efficient light usage, and when the light passing through the LCD panel, the light would have a directivity in a minor axis direction of the pixel.

Weber does not expressly disclose that a ratio of a length of the pixel on the major axis direction (that is the same meaning as the length of the pixel) to a length of the pixel in the minor axis direction (that is the same meaning as the breadth of the pixel) is substantially 3:1.

However, Nakamura discloses (col.1, line 66 - col.2, line 53; Fig.17) that a structure of a one-plate projector type liquid crystal display device in which the pixel length and breadth ratio is 3:1, and such structure is a less expensive structure and its definition is much higher.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to arrange a reflective polarizer and the pixel having a ratio of a length in the major axis direction to a length of the pixel in the minor axis direction is 3:1 as claimed in claims 25, 29 and 33 for achieving more efficient light usage and higher definition display.

Response to Arguments

10. Applicant's arguments with respect to claims 1-3, 5-22, 25-26, 29-30 and 33-34 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments:

1) The reference Gunjima fails to disclose the limitations as claimed in the claims 1, 13 and 20.

2) The Figs.32-39 in the specification cannot be a prior art, because the Figs.32-39 comes from applicant and it is unfair to use applicant's disclosure to reject applicant's invention.

Examiner's responses:

1) After examiner's further search and reconsideration, the examiner still believe that the reference Gunjima shows the polarizing sheet provided on the light-incident side of the LCD, and an average direction of an optical axis of polarization of light ray emitted from the flat light guide in the flat illumination device approximately agrees with the optical axis of polarization sheet on the light-incident side of the LCD. According to the further search, the new reference Weber also discloses (col.9, lines 43 - 67; Fig.11) that the optically structure layer (113) and structure surface (112) (also can be a light control element, because the function is to control light), and with the reflective polarizer (116) to make up a brightness enhanced reflective polarizer (110), and the light transmitted by optically structure layer (113) passes through the reflective polarizer (116) at near normal angles (perpendicular to reflective polarizer), so that is a polarized light transmission axis of the reflective polarizer to be adjusted substantially perpendicular to a control axis of the light control element, so as to enhance the brightness and to achieve an adequate contrast for the display.

2) Figs. 32-39 in the specification described that are conventional liquid crystal display structure, and these conventional figures constitute as prior art.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (571)272-2299.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The Fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mike Qi
January 23, 2004

TOAN TON for SLE
PRIMARY EXAMINER